In the Claims

Please amend claim 41 as indicated below, wherein any additions to the amended claim are underlined, and any deletions to the amended claim are presented as struckthrough text.

1. (Original) A method for increasing transport of fluids within a porous medium, said method comprising applying pressure pulses to the fluids, said pressure pulses having a predetermined frequency and amplitude.

2. (Original) The method of Claim 1, wherein at least one of the fluids is compressible.

3. (Original) The method of Claim 2, wherein at least one compressible fluid is a supercritical fluid.

4. (Original) The method of Claim 1, wherein the pulses have an amplitude in the range of about 0.0001% to about 50% of a mean process pressure.

5. (Original) The method of Claim 1, wherein the pulses have a frequency in the range of about 0.001 Hz to about 100 MHz and an amplitude in the range of about 0.01 psi to about 1000 psi.

6. (Original) The method of Claim 1, wherein the pulses have a frequency in the range of about 0.0001 Hz to about 100 kHz and an amplitude in the range of about 0.01 psi to about 10 psi.

7. (Original) The method of Claim 1, comprising applying pressure pulses of at least two different frequencies.

8. (Original) The method of Claim 7, wherein the at least two different frequencies include a high frequency pulse, and a low frequency pulse, and wherein the pressure amplitude of the high frequency pulse is in the range of about 0.0001% to about 10% of a mean process pressure and the pressure amplitude of the low frequency pulse is in the range of about 1% to about 50% of the mean process pressure.

9. (Original) The method of Claim 8, wherein the pressure amplitude of the low frequency pulse is higher than the pressure amplitude of the high frequency pulse.

10. (Original) The method of Claim 1, wherein the porous medium is a small pored structure selected from the group consisting of an aerogel, a xerogel, a silica gel, and a zeolite.

11. (Original) The method of Claim 1, wherein the porous medium is a large pored article selected from the group consisting of an agricultural article, a paper-based article, an article of clothing, a thin film, and a pharmaceutical.

12. (Original) The method of Claim 11, wherein the agricultural article is selected from the group consisting of a vegetable, a coffee bean, and a grain.

13. (Original) A method for reducing the time required to replace a first fluid located within a porous medium with a second fluid, which is miscible with the first fluid, said method comprising applying pressure pulses to the second fluid at a predetermined frequency and amplitude.

14. (Original) The method of Claim 13, wherein at least one of the fluids is a compressible fluid.

15. (Original) The method of Claim 14, wherein the compressible fluid is a supercritical fluid.

16. (Original) The method of Claim 13, wherein the pulses have an amplitude in the range of about 0.0001% to about 50% of a mean process pressure.

17. (Original) The method of Claim 13, comprising applying pressure pulses of at least two different frequencies.

18. (Original) The method of Claim 17, wherein two of the at least two different frequencies are a first frequency in the range of about 1 Hz to about 100 MHz and a second frequency in the range of about 0.0001 to about 100 kHz.

19. (Original) The method of Claim 18, wherein the second frequency is lower than the first frequency.

20. (Original) The method of Claim 18, wherein the pulses of the first frequency have an amplitude in the range of about 0.01 to 20 psi and the pulses of the second frequency have an amplitude in the range of about 0.1 to 1,000 psi.

21. (Original) The method of Claim 20, wherein the amplitude of the second frequency is higher than the amplitude of the first frequency.

22. (Original) The method of Claim 16, wherein the at least two different frequencies include a high frequency pulse, and a low frequency pulse, and wherein the pressure amplitude of the high frequency pulse is in the range of about 0.0001% to about 10% of a mean process pressure and the pressure amplitude of the low frequency pulse is in the range of about 1% to about 50% of the mean process pressure.

23. (Original) The method of Claim 22, wherein the pressure amplitude of the low frequency pulse is higher than the pressure amplitude of the high frequency pulse.

24. (Original) The method of Claim 13, wherein the porous medium is a small pored structure selected from the group consisting of an aerogel, a xerogel, a silica gel, and a zeolite.

25. (Original) The method of Claim 13, wherein the porous medium is a large pored article selected from the group consisting of an agricultural article, a paper-based article, an article of clothing, a thin film, and a pharmaceutical.

26. (Original) The method of Claim 25, wherein the agricultural article is selected from the group consisting of a vegetable, a coffee bean, and a grain.

27. (Original) A method of drying a porous medium containing a liquid, said method comprising;

providing a fluid to the porous medium under conditions to vaporize the liquid; and

applying pressure pulses to the fluid at a predetermined frequency and amplitude.

28. (Original) The method of Claim 27, wherein the fluid is compressible.

29. (Original) The method of Claim 28, wherein the compressible fluid is a supercritical fluid.

30. (Original) The method of Claim 27, wherein the pulses have an amplitude in the range of about 0.0001% to about 50% of a mean process pressure.

31. (Original) The method of Claim 27, comprising applying pressure pulses of at least two different frequencies.

32. (Original) The method of Claim 31, wherein the two or more different frequencies are a first frequency in the range of about 1 Hz to about 100 MHz and a second frequency in the range of about 0.0001 to about 100 kHz.

33. (Original) The method of Claim 32, wherein the second frequency is lower than the first frequency.

34. (Original) The method of Claim 32, wherein the pulses of the first frequency have an amplitude in the range of about 0.001 to 20 psi and the pulses of the second frequency have an amplitude in the range of about 0.1 to 1000 psi.

35. (Original) The method of Claim 34, wherein the amplitude of the second frequency is higher than the amplitude of the first frequency.

36. (Original) The method of Claim 31, wherein the at least two different frequencies include a high frequency pulse, and a low frequency pulse, and wherein the pressure amplitude of a high frequency pulse is in the range of about 0.0001% to about 10% of a mean process pressure and the pressure amplitude of a low frequency pulse is in the range of about 1% to about 50% of the mean process pressure.

37. (Original) The method of claim 36, wherein the pressure amplitude of the low frequency pulse is higher than the pressure amplitude of the high frequency pulse.

38. (Original) The method of Claim 27, wherein the porous medium is a small pored structure selected from the group consisting of an aerogel, a xerogel, a silica gel, and a zeolite.

39. (Original) The method of Claim 27, wherein the porous medium is a large pored article selected from the group consisting of an agricultural article, a paper-based article, an article of clothing, a thin film, and a pharmaceutical.

40. (Original) The method of Claim 39, wherein the agricultural article is selected from the group consisting of a vegetable, a coffee bean, and a grain.

41. (Currently Amended) A method of extracting a soluble component from a porous medium, said method comprising[[;]]:

providing a ~~compressible~~ fluid to the porous medium; and

applying pressure pulses to the ~~compressible~~ fluid at a predetermined frequency and amplitude.

42. (Original) The method of Claim 41, wherein the fluid is compressible.

43. (Original) The method of Claim 42, wherein the compressible fluid is a supercritical fluid.

44. (Original) The method of Claim 41, wherein the pulses have an amplitude in the range of about 0.0001% to about 50% of a mean process pressure.

45. (Original) The method of Claim 41, comprising applying pressure pulses of at least two different frequencies.

46. (Original) The method of Claim 45, wherein two of the at least two different frequencies are a first frequency in the range of about 1 Hz to about 100 MHz and a second frequency in the range of about 0.0001 to about 100 kHz.

47. (Original) The method of Claim 46, wherein the second frequency is lower than the first frequency.

48. (Original) The method of Claim 46, wherein the pulses of the first frequency have an amplitude in the range of about 0.001 to 20 psi and the pulses of the second frequency have an amplitude in the range of about 0.1 to 1000 psi.

49. (Original) The method of Claim 48, wherein the amplitude of the second frequency is higher than the amplitude of the first frequency.

50. (Original) The method of Claim 45, wherein the at least two different frequencies include a high frequency pulse, and a low frequency pulse, and wherein the pressure amplitude of a high frequency pulse is in the range of about 0.0001% to about 10% of a mean process pressure and the pressure amplitude of a low frequency pulse is in the range of about 1% to about 50% of the mean process pressure

51. (Original) The method of Claim 50, wherein the pressure amplitude of the low frequency pulse is higher than the pressure amplitude of the high frequency pulse.

52. (Original) The method of Claim 41, wherein the porous medium is a small pored structure selected from the group consisting of an aerogel, a xerogel, a silica gel, and a zeolite.

53. (Original) The method of Claim 41, wherein the porous medium is a large pored article selected from the group consisting of an agricultural article, a paper-based article, an article of clothing, a thin film, and a pharmaceutical.

54. (Original) The method of Claim 53, wherein the agricultural article is selected from the group consisting of a vegetable, a coffee bean, and a grain.